

Development of a Distributed System for an Estate Agents

Introduction:

The Aim of the project is to create an internal tool for estate agents to help manage and present properties to clients. The system will be supported by a distributed network of servers to improve scalability whilst maintaining access to required resources.

Software Used:

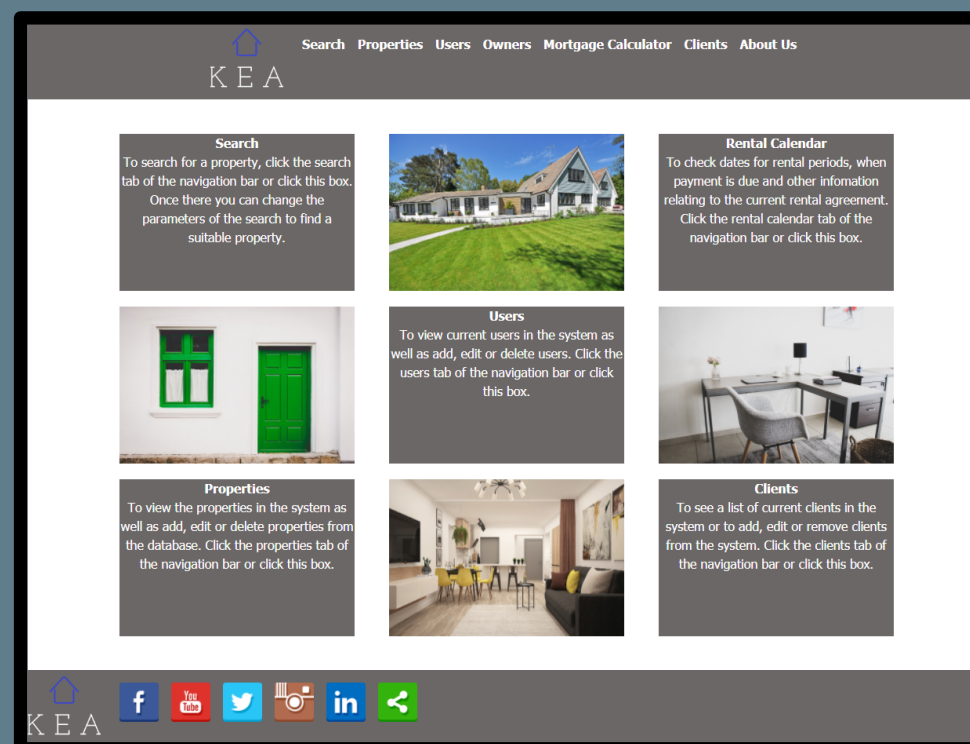
Prototype: Adobe XD
UI: HTML, CSS, JS and Bootstrap 4
IDE: Atom with Emmet
Web Server: Apache HTTP
Database Server: MySQL Server
Application Server: PHP Server

The web, database and application server are run in conjunction with software called MAMP (Apache – MySQL – PHP) which acts as an interface between servers.

UI:

The initial design was done via adobe XD as it allows the UI to be created from a visual interface, however the design principles used translate well into HTML and CSS.

The UI makes use of Bootstrap 4 as it provides a library of CSS for styling purposes as well as facilitating responsive UI design between window sizes.



Database:

The database was written in MySQL and consists of 5 tables; Users, Properties, Owners, Clients and Images.

The database access requests will be handled by PHP commands to extract data from the database server to the application server.

```
TableCreator
1 * DROP TABLE IF EXISTS users;
2 * DROP TABLE IF EXISTS properties;
3 * DROP TABLE IF EXISTS owners;
4 * DROP TABLE IF EXISTS clients;
5 * DROP TABLE IF EXISTS images;
6
7 * CREATE TABLE users(
8   user_id int NOT NULL,
9   username varchar(255) NOT NULL,
10  password varchar(255) NOT NULL,
11  PRIMARY KEY(user_id),
12  ENGINE=InnoDB)
13
14 * CREATE TABLE properties(
15  property_id int NOT NULL,
16  num_bed int NOT NULL,
17  num_bath int NOT NULL,
18  type varchar(255) NOT NULL,
19  parking boolean NOT NULL,
20  description varchar(255) NOT NULL,
21  price float NOT NULL,
22  s_line varchar(255) NOT NULL,
23  s_line varchar(255) NOT NULL,
24  postcode varchar(255) NOT NULL,
25  town varchar(255) NOT NULL,
26  sale boolean NOT NULL,
27  owner_id int NOT NULL,
28  PRIMARY KEY(property_id),
29  FOREIGN KEY (owner_id) REFERENCES owners(owner_id),
30  ENGINE=InnoDB);
```

MAMP:

By using MAMP it means that all server applications are installed in a single installer. The installs are local to MAMP so will not interfere with other versions of the server applications already on the machine. It also creates a single UI used to launch all servers simultaneously.

Future Works:

- Google Maps integration for property location
- Rental Calendar to organise rent payments and eviction dates
- Key possession Log with key sign-in/sign-out system
- Create client portal with limited access for potential buyers/renters
- Login and website security improvements.